Thread-Supplying Device FOR TEXTILE MACHINES

~~The invention relates to a yarn feeder having the characteristics of the preamble to claim 1, 2 or 3.~~

~~Yarn feeders are vendor parts for textile machines~~ and particularly in loop-forming textile machines are often found in great numbers thereon. The yarn feeders each feed one yarn to a yarn-using station, such as a knitting station. The quality of the knitted goods produced depends decisively on the precision and reliability of the yarn feeders. On the one hand, this makes demands in terms of precision – yet on the other the yarn feeders should be as simply embodied, economical, and simple to make and maintain as possible. Furthermore, they must reliably perform their function even if they are operated for relatively long periods without special maintenance and in particular without cleaning. Deposits of dust or fluff must not impair operation.

The goal is also to design a yarn feeder such that it can be adapted in a simple way to different kinds of ~~use.~~

In the industry, yarn feeders are known that have a metal housing, which on one end has a clamping device for fastening to a yarn-using machine, such as a knitting machine. The housing forms a retainer for two ball bearings, which are disposed on the side of the housing remote from the fastening device. The ball bearings rotatably support a vertically disposed shaft, which on its lower end has a yarn guide drum and on its upper end has one or more toothed-belt pulleys. The toothed-belt pulleys can be coupled to the shaft via a displaceable coupling disk.

A yarn brake and a plurality of yarn guide elements are disposed upstream of the yarn guide drum. Further yarn guide elements are disposed downstream of the yarn guide drum. In addition, a shutoff lever and a yarn feeler lever are pivotably supported on the housing and actuate switches disposed in the interior of the housing in order to indicate a yarn break and to shut off the

textile machine if necessary. For contacting a suitable electric line, connection means are provided on the fastening device, from which means electric lines lead to the appropriate switches in the interior of the housing. A signal light is also disposed on the yarn feeder and signals an error state accordingly.

These yarn feeders have proven themselves in practice. However, they require a certain expense for production.

~~It is the object of the invention to reduce this~~ expense.

This object is attained by a yarn feeder that has the characteristics of claim 1, 2 or 3.

In its embodiment according to claims 1 and 2, the yarn feeder has a plastic housing. The fastening clamp is also embodied of plastic. The special design of the fastening clamp according to claim 1 or 2 allows such a narrow design of this clamp, with the required stiffness and strength, that the retaining devices can be mounted on the retaining ring of a textile machine without the fastening clamps being a hindrance to each other. To that end, the invention provides on the one hand the possibility of embodying the jaw-like clamp on or in a box profile-like housing portion. Alternatively, the jaw-like clamp can be provided with reinforcement ribs, on its side pointing away from the jaw, which also furnish the desired strength if they extend relatively far upward, or in other words away from the retaining ring of the textile machine. On the textile machines, the spacing between the retaining ring and a drive belt for driving the yarn feeders is usually structurally specified by the construction and defined uniformly. It has been found that the reinforcing ribs are adequately large if, viewed from the retaining ring, they protrude past the plane defined by the lower edge of the belt. In this way, it becomes possible for the yarn feeders with the yarn guide drum, which are used to feed the yarns, for instance to knitting stations of a circular knitting machine and which must be relatively narrow in structure, to be ~~embodied of plastic with regard to the housing of the~~

~~fastening clamp. The not inconsiderable forces that in~~ particular engage the yarn feeders and are caused by the revolving drive belt are thus reliably absorbed and dissipated.

The yarn feeder, according to claim 3, has a housing with at least 2 housing parts, each of which has one bearing means for the continuous shaft. Thus both housing parts, embodied in clamshell fashion, jointly conduct the incident support forces of the bearing means to the fastening device and thus to the textile machine, which acts as a stationary bearing for the yarn feeder. This in turn makes it possible to divide the housing over a large area, so that in the dismantled state, unhindered access to the housing interior is possible. Once the two housing parts are put together, they are joined together positionally correctly by a connecting means, and as a result the housing is closed. Assembly is relatively quite uncomplicated. The dividing seam between the housing parts is preferably disposed substantially horizontally or slightly inclined, so that at least outside the fastening device, it extends along the side faces of the housing. This makes the interior of the housing parts easily accessible. In assembly, parts to be disposed in the interior can simply be introduced into it. This further simplifies assembly.

As the bearing means, ball bearings are preferably provided, which are received in appropriate bearing seats of the housing parts. As the bearing seats, tubular extensions can for instance be provided, which are embodied on the housing parts and extend outward away from them. The ball bearings are preferably introduced from outside into the bearing seats. In a preferred embodiment, the lower bearing seat, toward the yarn guide drum, extends into the yarn guide drum. This maximized the spacing between the two ball bearings, resulting in good support of the shaft with little play. To drive the shaft and the yarn guide drum, a plurality of toothed-belt pulleys or other kinds of pulleys can be disposed on the other end of the shaft as needed, with a belt ~~traveling along the pulleys. The resultant support forces~~

on the ball bearing are readily absorbed by the wide support spacing.

Also by means of the bearing seat extending into the yarn guide drum, it is attained that in the event of an error a yarn will not be wound onto the shaft, and this increases the operational safety.

The upper bearing seat can extend into the inside of a pulley, in order to maximize the spacing from the lower bearing seat as much as possible. In this case, both bearing seats are located outside the housing; the tubular extensions protrude upward and downward away from the housing.

In an advantageous embodiment, bearing receiving elements of elastomer are disposed in the bearing seats. These bearing receiving elements secure the ball bearings in the bearing seat. The bearing seats, on their inside face which is otherwise for instance cylindrical, are preferably provided with longitudinal ribs, which press into the bearing receiving elements. This provision makes it possible to press the bearings into the bearing seats with only slight axial forces and to secure them permanently there. This is true in particular even if the dimensions of the bearing seat should change or fluctuate somewhat because of production variations or temperature changes and aging.

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The fastening device on the machine is formed for instance by a jaw-like clamp, which is embodied on at least one of the housing parts. The housing parts are preferably, however, embodied fitting over one another in the region or the fastening device, so that each housing part and thus each bearing seat is joined to the fastening device in a way that directly transmits force. This makes good absorption of the retaining forces by the housing and good transmission of the support forces to the fastening device and the retaining device possible. To reinforce this, the housing parts in one embodiment are joined together in the region of the fastening device by at least one support means. The jaw of the fastening device can then be embodied such that on one side, one housing part has a bearing and clamping face, while on

~~the opposite flank or side the other housing part defines~~ the bearing and clamping face. As a result, when the fastening device is clamped firmly by means of a clamping screw that is braced on one leg and disoriented perpendicular to the clamping face, both housing parts ~~are braced against one another.~~

A coupling device for fastening at least one further housing part may be embodied or provided on the housing. As a result, additional elements can be secured to the housing, which makes the yarn feeder even more versatile. The coupling device is preferably a clamp coupling with a guide that can be tightened.

In a preferred embodiment, the housing parts are embodied as electrically insulating, at least on their inside. Preferably, however, the housing is made either entirely or in part of plastic. This affords the possibility of placing electrical conductor tracks, as metal elements, in suitable receptacles of the housing without special insulation. The metal elements can perform a dual function, by acting at the same time as bearings for other common moveable elements, such as electric switches, shutoff means, yarn feelers, or the like.

If the yarn feeder housing is made of plastic, then possible electrostatic charges, which the running yarn sliding along the yarn guide elements could cause, can be counteracted by grounding of at least one, preferably stationary yarn guide element. Thus fluff deposits can be reduced, and other harmful effects of static charges can be reduced or prevented. The grounding can be done by means of an electric conductor connected to ground and disposed in the housing, if this conductor is connected to at least one element that is electrically conductive and is in contact with the yarn. The plastic housing can comprise entirely insulating material or electrically weakly conductive plastic.

~~Advantageous details of embodiments of the invention will become apparent from the drawing, description or dependent claims.~~

~~Exemplary embodiments of the invention are shown in~~

~~the drawing. Shown are:~~

~~Fig. 1, the yarn feeder of the invention in a side~~ view;

Fig. 2, the yarn feeder of Fig. 1, in a perspective view;

Fig. 2, yarn feeders of Figs. 1 and 2, disposed on a retaining ring of a textile machine, in a schematic plan view;

Fig. 4, a modified embodiment of the yarn feeder of the invention;

Fig. 5, the yarn feeder of Fig. 4, in a sectional view;

Fig. 6, a first, lower housing part of the yarn feeder of the invention of Fig. 1 or Fig. 3, in a perspective view;

Fig. 7, the housing part of Fig. 6, in a side view;

Fig. 8, an upper housing part of the yarn feeder of the invention, in a perspective view;

Fig. 9, the housing part of Fig. 8, in a side view;

Fig. 10, the housing of the yarn feeder, in a cross section in the region of its fastening clamp;

Fig. 11, a yarn brake, intended for mounting on the housing of the yarn feeder, in a perspective detail view;

Fig. 12, a coupling clamping device for fastening fixtures, in a perspective view;

Fig. 13, a cover cap for the coupling device of Fig. 12, in a perspective view; and

Fig. 14, an alternative embodiment of the fastening device of the yarn feeder in a perspective view.

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Figs. 1 and 2 each show a yarn feeder 1 of the invention, in a side view and a perspective view, respectively. The yarn feeder 1 serves to feed a yarn 2 to a textile-processing machine, such. as a knitting machine. The yarn feeder 1 has a housing 3, which serves as a basic carrier for all the elements of the yarn feeder 1. On one end, the housing 3 is provided with a fastening device 4, which is arranged to support and secure the yarn feeder 1 on a suitable retainer 5, such as a rail or a ring of the textile machine. One such ~~retaining device 5 on the machine is shown in Fig. 3. By~~

~~way of example, it is formed in a known manner by a ring~~ of rectangular cross section and an electric connection cable laid along its outside. A belt 5a serves to drive all the yarn feeders 1.

As shown in Fig. 5 (in conjunction with a slightly modified embodiment), the housing is penetrated by a shaft 6, which is rotatably supported in the housing 3 and disposed approximately vertically. For bearing purposes, two ball bearings 7, 8 are used, which are held in respective bearing seats 9, 10 of the housing 3.

The shaft 6 on its lower end has a yarn guide drum 12, around which the yarn 2 is wrapped once or multiple times. The yarn guide drum 12 is carried and driven by the shaft 6. To that end, the shaft 6 on its upper end has one or more toothed-belt pulleys 14, 15, which are supported rotatably on the shaft 6 by ball bearings 16, 17 in the present exemplary embodiments.

The toothed-belt pulley 14 meshes with the belt 5a, whose lower edge is suggested in Fig. 5 by a dot-dashed line. Between the toothed-belt pulleys 14, 15, a displaceable coupling disk 18 is disposed. On both of its flat sides, the disk has toothed coupling rings 21, 22, with which the toothed-belt pulleys 14, 15 can be coupled alternatively with the shaft 6 and thus serve as a drive device for the shaft. The coupling disk 18 is provided with coupling prongs for this purpose.

The housing 3 is preferably constructed in multiple parts. In that case it first has a lower housing part 25, which is shown separately in Figs. 6 and 7. The housing part 55 is a substantially clamshell-like injection molded cart. For forming the fastening device 4, the housing part 25 has a portion 26 in the form of a U in side view, whose jaw opens downward and whose inner contour is adapted to a fastening rail (retaining device) on the machine. On the legs 26a that define the jaw, lateral protrusions 27 are provided for transmitting an outward-oriented force, which spreads the jaw wider, to the other housing cart 33. Thus the leg 26a is the leg that is primarily supported on the retaining device and ~~in turn on a corresponding leg of the housing part 33~~

(Fig. 9). On the opposite side of the jaw, the conditions are reversed. The leg 26b on that side is supported secondarily, or in other words indirectly on the retaining device. Support cleats 28 act as abutments for corresponding parts (82, Fig. 9) of the corresponding leg of the housing part 33, which comes directly (primarily) into contact with the retaining device.

The fastening device 4 embodied on the housing 3 is embodied as a fastening clamp by the housing 3; for that purpose, no force-observing elements, reinforcing elements or the like of any kind made of material extraneous to the housing are provided. The cross section of the housing 3 in the region of the fastening device 4 can be seen in Fig. 10. The upper housing part 33 and the lower housing part 25 together define a hollow profile, which is embodied approximately in the manner of a box profile. It can be put together in such a way that the housing part 25, which in the section shown in Fig. 10 is approximately flat, has the upper housing part 33, which here is U-shaped fitting over it. in the interior enclosed by them, reinforcement ribs 33a, 33b, 33c can be provided. As needed, these ribs can also fill the interior almost entirely or entirely. However, relatively narrow ribs, of the kind also seen in Fig. 8, are preferred. The somewhat wider middle rib 33b can, as seen in Fig. 8, in turn be divided into ribs, so that an overly large plastic volume does not occur at any point of the housing part 33. Overly great material thickness can thus be avoided.

The hollow profile-like embodiment of the clamp, formed by the two housing parts 25, 33, and the optionally provided inner ribs 33a, 33b, 33c assure adequate rigidity of the fastening device 4 with respect to forces having the tendency to spread the jaw wider. The fastening device 4 can thus be made so narrow that it does not protrude laterally past the yarn feeder, or does so at most only slightly, so that as shown in Fig. 3 the yarn feeders 1 have space side by side on the retaining ring 5.

On its underside, the clamshell-like housing part

25 has a tubular extension 31, which in the inside forms the bearing seat 10. In the opposite direction, a further tubular attachment 32 extends through the interior of the housing 3 vertically upward in order to align the housing part 25 with respect to a second, upper housing part 33. For further alignment, two pegs 34, 35 adjacent to the tubular attachment 32 are used, which protrude vertically upward from the bottom of the housing part 25. In the region of the fastening device 4, a further peg 36 is provided, which furthermore has an opening for a fastening screw.

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As seen from Fig. 6, at least two metal strips 33, 39, are placed in suitable receptacles in the housing part 25; they are retained in corresponding slits. The metal strip 38, embodied as a U-shaped hoop, is for instance connected to ground potential and has notches 41, 42, 43, 44 for the pivotable bearing of an inlet-side yarn feeler 45 and an outlet-side yarn feeler 46 and also has an eyelet 47, in order to make a ground connection with external fixtures. This connection is made particularly to fixtures that come into contact with the yarn 2. Other stationary or moving yarn guide elements may, but need not, be grounded.

The metal strip 39 may lead to switches 48, 49, actuated by the yarn feelers 45, 46, of two separate shutoff current circuits. On its end remote from the switches 48, 49, it may be embodied as a clamp contact for an electronic component 51. This component may in turn be connected by its other end to a clamp contact of a further conductor 52. For contacting a line provided on the retainer on the machine, windows 53, 54 extending in the region of the fastening device 4 into the housing interior are provided, through which connection elements can reach. In the vicinity of the fastening device, a single indicator light 50 for both shutoff current circuits is disposed, which lights up as soon as one of the switches 48, 49 is actuated, or in other words as soon as one of the yarn sensors has been pivoted downward. The indicator light is inserted into a stamped conductor track.

The upper housing part 33 can be seen from Figs. 8 and 9. It is embodied in clamshell fashion and in its interior, it has hollow pegs 61, 62 for receiving the pegs 34, 35 of the lower housing part 25. A recess 63 of circular cross section is provided for receiving the hollow peg 36, and a threaded bore for a fastening screw 64 (see Fig. 5) is provided on its bottom. The bottom is formed, as will be explained hereinafter, by a part that belongs to a coupling device. For adjusting the housing parts 33, 25, and in particular to attain adequate alignment of the ball bearings 7, 8 with one another, a suitable seat is embodied in the housing part 33 in order to receive the tubular extension 32. This seat is formed substantially by a stepped bore which is capable of receiving the upper end, embodied somewhat conically if needed, of the tubular extension 32. For low-play or play-free centering of the free end of the extension 32, axially oriented ribs 66 may be disposed on the circumference of the approximately cylindrical outer surface of the seat 65.

On the outside of the housing part 33, the bearing seat 9 is embodied, coaxially to the seat 65 on the ~~inside~~.

Also embodied in the upper housing part 33 are receptacles for electrical contact means, such as two electrical conductors 67, 68, which have ends 69, 70 tapering to a point. The ends 69, 70 protrude into the region of the fastening 4 and are disposed and retained in such a way that they protrude through the windows 53, 54 (Fig. 6) as can be seen particularly from Fig. 8 or Fig. 4. The contact with the contact strips of the lower housing part 25 is made automatically when the housing 3 is put together, for instance in that these strips press resiliently against the conductors 67, 68.

Sub A1 13 In the housing 3, and in the present exemplary embodiment in the housing part 33, a feeler barrier 71 is supported longitudinally displaceably; it can be seen from Figs. 1, 8 and 9. It is formed by a sheet-metal strip whose free end, embodied as a handle 72, protrudes out of the housing part 33. To that end, a depression 73

visible in Fig. 1 is embodied on the housing part 33, and an angled end of the feeler barrier 71 is disposed in the depression. The feeler barrier 71 is displaceably supported and is profiled in such a way that it pivots first one feeler lever (45) and then the other feeler lever (46) from a freely downward-hanging position into an upper position upon actuation.

As seen particularly from Fig. 12, a jaw-like portion 80 is embodied on the fastening device 4 of the housing part 33 and can fit over the portion 26 of the lower housing part 25. It has a rear bearing depression 81, into which the protrusions 27 (Fig. 7) off the lower housing part 25 can move. On the opposite side, conversely, a bearing region 82 is formed, which is braced on the support cleats 28 of the lower housing part 25, when it is urged in the region that stretches the jaw open.

Between the housing parts 25, 33, an approximately horizontal dividing seam 83 is formed. The housing parts 25, 33 fit in one another here. Approximately in a rectilinear extension of the dividing seam 83, in the region of the fastening 4, a coupling clamping device 84 is formed, which is shown separately in Fig. 12. It is a component of the upper housing part 33 and can be seen in Fig. 12. It is termed by a flat guide plate 86, connected to the housing part via ribs 85, and its free end has a female-threaded hollow peg 87, which forms the bottom of the recess 63. The hollow peg 87 is carried by the guide plate 36 and protrudes freely into the recess 63. The fastening screw 64 is seated in the hollow peg 87 and holds the two housing parts 25, 33 together, and once it is tightened it deforms the guide plate 85 somewhat. A foot 187, slipped onto the guide plate and having a shape complimentary to the guide plate is firmly clamped thereby. The foot 187 has two cleats 188, 189, which fit with little play into the interstice between the guide plate and the adjacent housing face period. When the guide plate 86 is deformed, the foot 187 clamps. In Fig. 4 and Fig. 9, a cover cap 89 is thereby retained; this cap is shown separately in Fig. 13. As needed, however,

this cap can be removed and replaced with a retaining hoop 90, as shown in Fig. 1 or Fig. 2. By way of example, the retaining hoop can carry yarn guide means, such as a tubule 91.

The retainer 90 can fit over the toothed-belt pulleys 14, 15. Its clamping retainer is disposed in the immediate vicinity of the fastening 4.

For secure fastening of the ball bearings 7, 8 and the bearing seats 9, 10, elastomer elements are disposed between the respective ball bearings 7, 8 and the bearing seat 9, 10. The bearing seats 9, 10 are provided on the inside with preferably longitudinal ribs or regions protruding in other ways, so that the elastomer elements, in the region off the longitudinal ribs, are compressed somewhat between the outer bearing ring and the rib. The elastomer elements have a compensatory effect for temperature changes, shrinking from aging, and production variations.

The housing parts 25, 33 are held against one another by the fastening screw 64 and by other fastening screws 93a, 93b. These fastening screws 93a, 93b can also serve to hold further elements, such as yarn guiding elements 94 or a knot catcher 95 (see Fig. 5) against the housing 3, the knot catcher being electrically connected to the eyelet 47 of the grounded metal strip 33. Immediately upstream of the yarn guide drum 12, a further yarn guide 95a may be provided, which is retained against an extension off the lower housing part 25. Following the yarn guide drum, further yarn guide elements 96, 97 may be disposed.

While the yarn guide element 96 is embodied as a hook and is retained non-displaceably, the yarn guide eyelet 97 is preferably embodied adjustably, as an antifilamentation device. For instance, the yarn guide eyelet 97 may be embodied as a wire hoop, whose two ends have a foot that is supported displaceably on the housing 3. To that end, the lower housing part has one pocket 98, visible in Fig. 8, on both sides, the pocket having vertical end faces. The upper housing part 33 (Fig. 8) has cheeks 101, 102, which are associated with the

pockets 98 and are profiled on their inside in such a way that on both sides of the pockets 98 they have guide grooves 103, 104, into which the wire hoop can snap. For adjustment purposes, the hoop can thus be compressed and transferred out of the guide groove 103 into the guide groove 104, and vice versa. The lower free end of the hoop, forming an eyelet, can thus be transferred front a first position, in which it is located virtually at the same level as the lower rim or the yarn guide drum but spaced apart from this drum, to a second position in which it is located relatively far below the lower rim but horizontally closer to it.

Optionally, a yarn brake 105, which may be driven, is provided on the yarn feeder 1. As needed, a non-driven yarn brake can also be provided. The yarn brake 105 has two rings 106, 107, visible particularly from Fig. 11, which each have one inner and one outer rim; the rims of the two rings 106, 107 are curved away from one another. Permanent magnets 108 tense the rings 106, 107 elastically against one another.

The rings 106, 107 have a relatively large central opening 109, through which a wire rib 110 extends. This wire rib is supported in a plastic guide element 111, which is locked with a wire hoop 112 and has a leg 114 extending below the rings 106, 107 (in Fig. 11, the yarn brake 105 is shown standing on its head).

The wire hoop 112 has two hoops 116, 117, which carry the guide element 111 and the rings 106, 107. The legs are supported longitudinally displaceably in a guide part 118. The leg 117 has an end bent inward, that is, toward the rings 106, 107, on which end an intermediate element 120 is held, being braced on the guide element 118 via a helical spring 119 or other kind of spring. The other leg 116 is approximately aligned with the free end of the leg 117 but is bent away from it. The end has a tappet 121, which may also be formed by a cap-shaped plastic part.

The guide element 118 is preferably a plastic element, with a base 122 and a cap 123 that are joined together via a film hinge 124. Detent means, in the form

of a rib 125 embodied on the free end 125 of the base 122 and an undercut 126 embodied on the cap 123, allow the base 122 and cap 123 to be secured to one another. This fixes the hoop 112 in such a way that it is now only axially displaceable and otherwise is retained. The yarn brake 105 is thus a fixture module that is simple to put together and connect.

For receiving the thus-formed brake unit, a pocket 130 is formed on the housing 3, preferably on the upper housing part 33. This pocket may be provided with guides, so that the yarn brake 105 can be introduced into this pocket in guided fashion like a drawer. The fastening screw 93b can act as a securing means that prevents the brake unit from sliding out of the pocket. Alternatively, detent means may be provided.

As seen from Fig. 5, the tappet 121 reaches through a recess 132 (see Fig. 6) provided in the extension 32. A protrusion or cam, not shown in detail, provided on the shaft 6 can be disposed in such a way that upon each revolution of the shaft 6, it transmits a pulse to the tappet 121 and thus to the yarn brake 105. Alternatively, a reducing gear or a shifting gear, similar to a speedometer drive, may be disposed between the shaft 6 and the cam, in order to transmit one pulse to the yarn brake 105 after only a fixed number of revolutions of the shaft 6.

The yarn feeder 1 described thus far functions as follows:.

In operation, the yarn feeder is secured to a yarn-using machine. To that end, the fastening device 4 is mounted on a retaining ring, and a screw, not shown further in Fig. 5, seated in a nut 140 is tightened. In this process, the ends 69, 70 (Fig. 4) tapering to a point penetrate the insulation of an electrical line, laid along the retaining ring, and make electrical contact with it. The fastening device 4 is also tightly seated on the retaining ring. The two housing parts 25, 33 fitting in one another in the region of the fastening device 4 mutually support one another, so that both of them are equally tightly fastened on the retaining

device. A belt is now placed on at least one of the pulleys 14, 15; the applicable pulley is coupled to the shaft 6, and a yarn is drawn in. The yarn is guided by the yarn inlet eyelets of Fig. 5 or a yarn tubule of Fig. 1 and Fig. 2 to the knot catcher 95 and the yarn brake 105. Here the yarn is clamped between the two rings 105, 107 and then travels via the yarn feeler lever 46 and optionally the yarn eyelet 95a to the yarn guide drum 12. The yarn 2 wraps around this drum once or multiple times, and the yarn 2 then travels, sweeping over the lower rim of the drum 12, to the adjustable yarn guide hoop 197. After passing this hoop, the yarn travels to the outlet eyelet 96. Between the outlet eyelet 96 and the yarn guide hoop 97, the yarn tension feeler 45 rests on the yarn. The introduction of the yarn can be facilitated if the feeler barrier 71 is actuated before the yarn 2 is drawn in; transfers both yarn feelers 45, 46 to their upper, raised position. After the yarn has been drawn in, the feeler barrier is undone by means of the handle 72, and as a result the yarn feelers 45, 46 move downward by their own weight and rest on the yarn 2.

In operation, the yarn guide drum 12 is driven to rotate and draws yarn off via the yarn brake 105. The yarn is fed positively to the textile machine and in the process runs along the lower rim of the drum. The yarn tension in this operation is so great at the two yarn feelers 45, 46 that both feeler levers are in a raised position. Correspondingly, the switches 48, 49 accommodated in the housing are not actuated, and the signal light 50 mounted visibly from all sides on the housing 3 remains dark. However, if one of the yarn feelers 45, 46 drops downward because of a tear in the yarn, then the signal light 50 receives current and lights up. In Fig. 4, this is shown for the yarn feeler 45. It is assumed that at the knot catcher 95 a yarn tear has occurred, so that the yarn is interrupted and the torn-off end of the yarn 2 is just now leaving the yarn brake 105. The yarn feeler 46 therefore drops downward, and as a result the switch 49 responds and appropriate measures can be taken.

If needed, the yarn feeder 1 can be refitted, for instance by replacing the retainer 90 with the cover cap 89. To do so, the fastening screw 64 need merely be loosened somewhat, after which the retainer 90 or the cover cap 89 can be pulled off the coupling clamping device 84. After that, whichever is the other part is slipped onto the coupling clamping device 84 and tightened by tightening the fastening screw 64. The yarn feeder 1 can also be repositioned in a simple way with regard to drawing off yarn. The position of the yarn guide hoop 97 can then be adjusted in such a way that the yarn is pulled more or less via the lower rim or one yarn guide drum 12. It can be adjusted along a path on which at the same time both the level off the yarn guide hoop and its spacing from the pivot axis of the shaft 6 can be varied. The adjusting device is formed by an approximately linear guide with an acute-angled orientation of 30 to 40° from the pivot axis of the shaft 6.

A modified embodiment of the yarn feeder 1 is shown in Fig. 4. It differs from the above-described yarn feeder 1 in terms of the embodiment of the fastening device 4. The fastening device is provided, on the side remote from the jaw, with reinforcing ribs 33a', 33b', 33c', which belong to the housing part 33 and whose special feature is that they protrude front the level that is defined by the lower edge of the drive belt and is suggested in dot-dashed lines Fig. 14. The wall thickness of the ribs 33a', 33b, 33c' is overly great and is substantially less than their respective height. This makes the fastening device 4 so resistant to widening forces that it is possible to dispense with introduction elements, metal inlays or other stiffening additional elements in the clams. Only the nut 140 visible in Fig. 5 is needed. Other metal elements can be omitted.

The yarn feeder 1 of the invention has a plastic housing 3, preferably made of two clamshells. For connection to a retainer on the machine, a fastening device 4 is provided that is made of plastic. The fastening device 4 is made rigid by suitable shaping and

makes do without metal inlays. The two halves of the housing each have one bearing for a continuous shaft, which on one end carries a yarn guide drum and on its other end carries pulleys 14, 15, for instance, as a drive device. Fastening means serve to hold the two housing parts together in the correct position. The housing 3 is easy to open for maintenance purposes.